

Application No. 10/594,800
Amendment dated May 11, 2010
In Reply to Office Action of March 3, 2010
Attorney Docket No. 1217-062918

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) A process for treating ammonia containing wastewater comprising the step of bringing an ammonia-treating material and ammonia containing wastewater into contact with each other to remove ammonia in the wastewater continuously as nitrogen gas,

wherein the ammonia-treating material comprises a long carrier and complex bacterial sludge attached and immobilized on the carrier, the carrier comprising a net, a nonwoven fabric or a woven fabric comprising fibers or filaments, the carrier being attached to a support, the complex bacterial sludge comprising bacteria including autotrophic anammox bacteria and bacteria including autotrophic ammonia-oxidizing bacteria,

wherein the ammonia containing wastewater contains dissolved oxygen at a concentration of not less than 0.5 mg/l, and

wherein in the complex bacterial sludge, the bacterial sludge including autotrophic anammox bacteria are present within the bacterial sludge including autotrophic ammonia-oxidizing bacteria such that the complex bacterial sludge has a core-sheath structure.

4-15. (Canceled)

16. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia-treating material and

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the ammonia containing wastewater are brought into contact with each other in one step.

17. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia-treating material and the ammonia containing wastewater are brought into contact with each other while supplying air to the ammonia containing wastewater.

18. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia-treating material is provided in an inner peripheral area in a reaction tank, the ammonia containing wastewater is supplied to the reaction tank, and air is supplied from a central bottom part of the reaction tank to achieve a dissolved oxygen concentration of not less than 0.5 mg/l.

19. (Previously Presented) The process for treating ammonia containing wastewater according to claim 18, wherein air is supplied from a central bottom part of the reaction tank to generate an upward flow of wastewater in a central area in the reaction tank and a downward flow of wastewater in an inner peripheral area in the reaction tank.

20. (Previously Presented) The process for treating ammonia containing wastewater according to claim 19, wherein an air guide tube is provided in a central area in the reaction tank in a position such that a lower opening of the tube is opposed to the bottom of the reaction tank with a space from the bottom of the reaction tank, and air is supplied through the lower opening of the air guide tube to generate an upward flow of wastewater in the central area in the reaction tank.

21. (Previously Presented) The process for treating ammonia containing wastewater according to claim 18, wherein the longer direction of the long carrier is perpendicular to the bottom of the reaction tank.

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22. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the fibers or the filaments are polyacrylic fibers or polyacrylic filaments.

23. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the long carrier has a length to diameter ratio of not less than 3.

24. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the bacterial sludge including autotrophic ammonia-oxidizing bacteria are attached and immobilized in a thickness of not less than 5 mm.

25. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia containing wastewater in the reaction tank has a BOD concentration of not more than 20 mg/l.

26. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia containing wastewater in the reaction tank has a temperature of 30 to 40°C.

27. (Previously Presented) The process for treating ammonia containing wastewater according to claim 3, wherein the ammonia containing wastewater in the reaction tank has a pH of 7.4 to 8.0.